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RESEARCH ARTICLE

An annotated list of the reptiles of the highland grassland of Tandilia Mountains, Argentina

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Abstract

The study of biodiversity is a fundamental step to develop conservation strategies. Reptile populations are immersed in a global crisis, due to anthropic disturbances. Almost the entire Pampa ecoregion in Argentina was modified for agricultural and livestock activities, the only remnants of mountain native grasslands in Buenos Aires province being the Tandilia and Ventania mountain systems. Ventania reptiles have been exhaustively researched in last years, while Tandilia counts with fewer studies. We presented an actualized reptiles list of the Tandilia Mountain System. We used five data sources to collect presence records: literature, fieldwork, museum collection, citizen science, and a online database. The composition of reptiles from the Tandilia Mountain range includes 26 species in 12 families. Due to the presence of several endemic reptiles, and the representativeness of more than half of the reptiles of Pampa Ecoregion, Tandilia would be useful to determine conservation priority areas to conserve the native grassland and their reptile fauna.

Keywords

biodiversity, conservation, lizards, Pampa ecoregion, snakes, turtles

Introduction

Biodiversity knowledge of a specific area is a fundamental step to assess and plan conservation actions against current local and global threats (Ringuelet and Aramburu 1957; Krebs 2008). Reptiles are immersed in a global crisis of biodiversity, which expresses in the decline and local extinctions of many species, mainly caused by such anthropic disturbances as habitat loss and fragmentation (Gibbons et al. 2000). Most species of reptiles are sedentary and they have a low capacity for movement, so they have limited capacity to move among patches of habitat (Pianka 1986; Sarre 1995; Fischer et al. 2004, 2005; Vitt and Caldwell 2014). Thus, reptiles may be particularly affected by the effects of habitat loss, fragmentation, and degradation (Driscoll 2004; Brown et al. 2008).

The majority of the Pampa ecoregion, one of the largest grasslands of the world, was replaced by agriculture and forestry (Isacch et al. 2017; Herrera et al. 2019; Nanni et al. 2020). Two mountain ranges systems emerge in the extremely flat Pampa grasslands: the Tandilia and the Ventania. These mountains, acting as a refuge for native grassland species, including several endemic amphibians and reptiles (Isacch et al. 2017; Herrera et al. 2019; Vera et al. 2020; Martínez Aguirre et al. 2021). Currently, both mountain systems are severely fragmented, and the native highland grassland is surviving in a few thousands of small remnants, harboring an outstanding biodiversity (Schwerdt et al. 2014; Martínez Aguirre et al. 2021). The biodiversity of the Tandilia Mountain System remnants is facing a combination of threats (Kacoliris et al. 2013). Invasive woody plant species are replacing the grassland and homogenizing the landscape (Zalba and Villamil 2002; Márquez et al. 2019). The overgrazing, quarry activities, and the urban growth over the mountains accentuate the degradation, fragmentation, and isolation of grassland remnants (Cepeda et al. 2013).

The reptiles of Ventania Mountain System are well known, and many herpetological studies have been carried out there (Koslowsky 1895; Couturier and Grisolía 1989; Viñas et al. 1989; Di Pietro et al. 2012, 2018, 2020a, b; Di Pietro 2016). However, the Tandilia Mountain System has been poorly explored in search of reptiles. The reptiles of Tandilia have been systematically surveyed in a few remnants at the southeast range by Vega and Bellagamba (1990). A couple of references for central and northern range were reported in general reptile literature for Buenos Aires province and only some zoogeographic notes and occasional records reported specific localities and voucher specimens (Nágera 1915; Gallardo 1977; Cei 1993; Di Pietro et al. 2010, Vera et al. 2020). Interestingly, Tandilia Mountain System herpetofauna includes several endemic species, such as the Blackish Darwin toad *Melanophryniscus nigricans* Martínez Aguirre, Dopazo, Cortelezzi, Arellano, Trofino Falasco, Simoy & Berkunsky, 2021 and two lizards, *Liolaemus absconditus* Vega, Quinteros, Stellatelli, Bellagamba, Block & Madrid, 2018 and *Liolaemus tandiliensis* Vega, Bellagamba & Lobo, 2008. These two lizards have been described in the southern range of the Tandilia Mountain (Vega et al. 2008, 2018), with scarce

records of *L. tandiliensis* in the central range. The presence of these endemisms and other reptiles in the rest of the Tandilia Mountain range are still unknown.

Studying biodiversity in large-scale patterns requires a vast amount of data to be collected across different habitats and locations over several years or decades (Bonney et al. 2009). This is very expensive in terms of time, money and human resources. Citizen science is a research method that enlists the public to gather scientific information and allows collecting data in large temporal and spatial scales (Bhattacharjee 2005; Cooper et al. 2007). Local citizen science projects have been remarkably successful in advancing scientific knowledge (Bonney et al. 2009). Since 2019, a local citizen science project, Reptiles de Tandilia, has been running in the Tandilia region.

In this work, we compiled and described the composition of the reptiles of the Tandilia Mountain System as baseline information to develop conservation strategies of this unique and endangered highland grassland in Argentina. Additionally, we provided the conservation status of each species and a qualitative resume of habitat use.

Methods

Study area

The Tandilia Mountains is located in the center of Buenos Aires province, Argentina. These mountains are the most ancient in Argentina, dated in 2200 m.y. and are composed of igneous-metamorphic rocks covered by loess (Teruggi and Kilmurray 1980; Dalla Salda 1999). The Tandilia Mountains emerges along 350 km and covers 12.314 km^2 (Dalla Salda et al. 2006). The maximum height (524 m a.s.l.) is in Cerro la Juanita in Tandil locality. The average temperature is 21 °C in the warmest month and 6.3 °C in the coldest month. The 850 mm average annual rainfall shows two peaks, one in autumn and another in spring (Valicenti et al. 2010).

The predominant vegetation in highland grasslands is the grass steppe, formed by large tussock grass of the *Stipa* genus, followed by *Piptochaetium*, *Paspalum*, *Festuca*, *Poa*, and others (Cabrera 1971). Also, there are *Cortaderia selloana* in the edge of the water bodies, shrubs like *Colletia paradoxa*, *Baccharis*, *Discaria*, *Eupatorium*, and many ferns as *Anemia tomentosa* and *Pellaea ternifolia* (De la Sota 1967; Cabrera 1971; Valicenti et al. 2010). Several plant endemisms are present in Tandilia highland grasslands as *Baccharis tandiliensis*, *Lepidium tandilense*, *Mimosa tandilensis* and *Senecio tandiliensis* (Bilenca and Miñarro 2004; Herrera et al. 2019). Woody invasive species are common in some highland grassland remnants being pines (*Pinus* sp.) Spanish broom (*Spartium junceun*), Australian blackwood (*Acacia melanoxylon*), French broom (*Genista monspessulana*) and blackberry (*Rubus ulmifolius*) the most common ones (Kacoliris et al. 2013; Márquez et al. 2019).

Because of their biodiversity and endemisms, the Tandilia Mountain System is considered as a Valuable Grasslands Areas for South America (Bilenca and Miñarro

2004). Unfortunately, only 0.07% of 12,314 km^2 of the Tandilia Mountain System is under a protection category with three protected areas covering 8.8 km^2, viz. the *Reserva Natural de Objetivo Mixto Boca de las Sierras* (5.4 km^2), *Reserva Natural Sierra del Tigre* (1.2 km^2) and *Reserva Natural Privada Paititi* (2.2 km^2).

Data Source

We combined the records of reptiles in the Tandilia highlands, which were available at museum collections, online biodiversity databases, scientific literature, and the citizen science project Reptiles de Tandilia, with the records of an extensive fieldwork campaign. We followed the IUCN conservation status from each species, and the Argentinean National Red List (Abdala et al. 2012; Giraudo et al. 2012; Prado et al. 2012). We followed Uetz et al. (2021) for the nomenclature and systematics of the lizards and amphisbaenians, and Williams et al. (2021) and Melo-Sampaio et al. (2021) for the snakes.

We carried out fieldwork during the spring and summer, from September 2019 to March 2020 in the following sites (Fig. 1): *Reserva Natural Privada Paititi* (37°55.2592'S, 57°48.7316'W); *Estancia El Bonete* (37°53.6818'S, 58°39.8622'W); *Cerro de las Ánimas* (37°21.1259'S, 59°6.247'W); *Estancia Las Mercedes* (37°22.8118'S, 59°5.7525'W) and *Reserva Natural Sierra del Tigre* (37°22.4667'S, 59°7.7149'W); *Los Teros* (37°6.667'S, 59°49.9835'W); *Cerro Boca del Diablo* (36°56.2889'S, 60°9.1264'W), *Cerro Largo* (36°55.0082'S, 60°9.3192'W), and *Cerro Matilde-Catriel* (36°56.068'S, 60°10.4725'W). Samples consisted of visual encounter surveys searching in all habitat types, on transects of 500 meters long and 30 meters wide tracked by three observers. Surveys were performed between 9:00–12:00 hours and 13:00–16:00 hours during 42 days, and between 18:00 and 22:00 hours over the course of 11 days (total of 296 hours) in eight campaigns, each one with a five-day average. Also, we actively searched under logs, rocks, and other structures as wood and firewood to find underground or sheltered species. We recorded the location (with GPS Garmin eTrex 20) of each specimen and we took at least one photograph. Most of the specimens were released and only a few of them were collected and deposited in the Herpetological Collection of Museo de La Plata (MLP, see Appendix 1). The collection permit was provided by Dirección de Flora y Fauna de la Provincia de Buenos Aires (Permit number: 2019-16058740-GDEBA-DFYFMAGP).

In addition, we inspected voucher specimens in the herpetological collection of MLP, Argentina. We searched for records in three online biodiversity databases: Ecoregistros, iNaturalist and the Argentina biodiversity database (Sistema Nacional de Datos Biológicos, SNDB). Ecoregistros and iNaturalist are web platforms where users upload photographic records of wildlife observations. We inspected all records and we selected those where the photographs allowed us an unambiguous identification of the reptile species. The SNDB encompasses the main museum collections of Argentina. We compared our review of the specimens at the Museo de La Plata, and we found no differences with the records

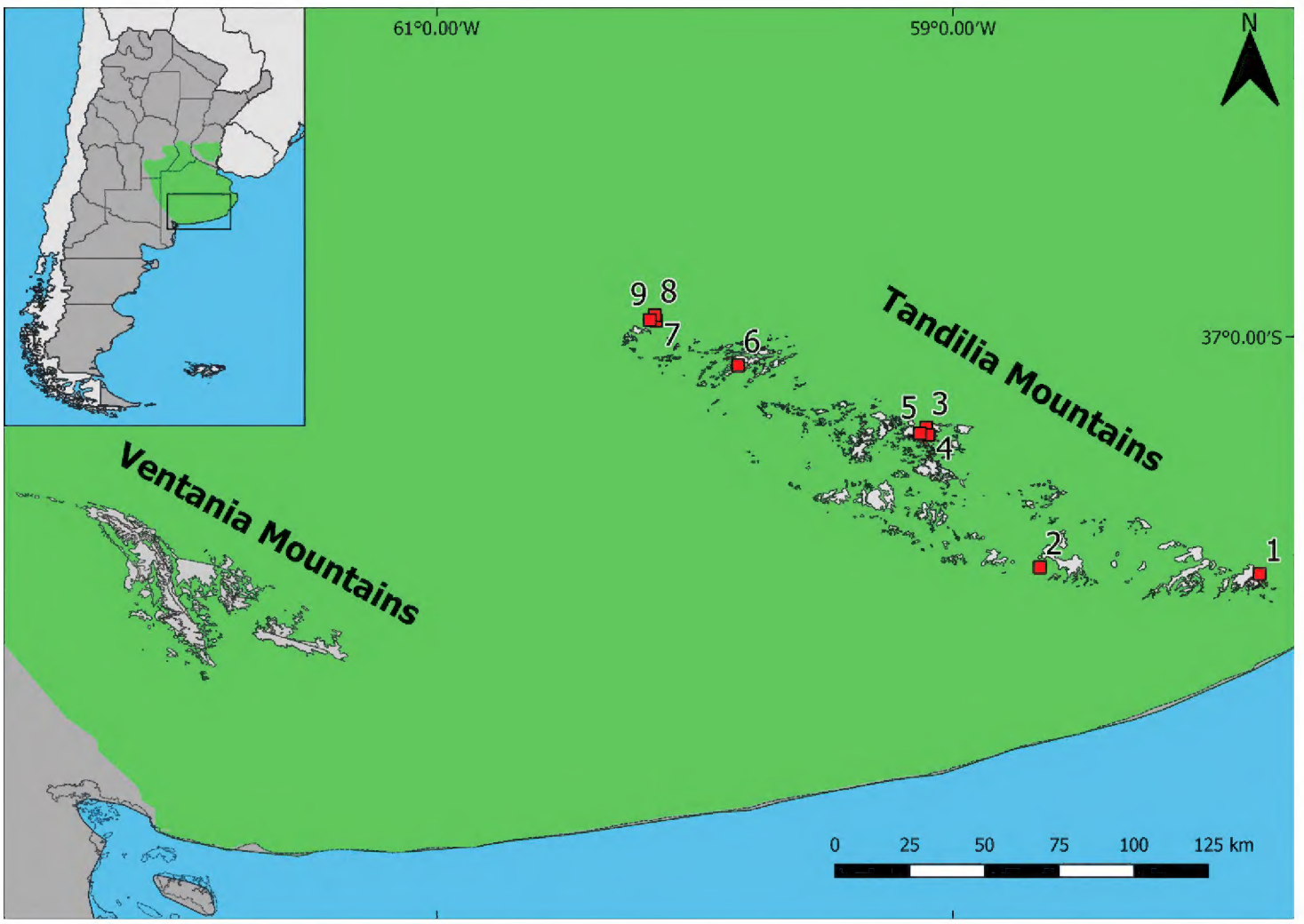

Figure 1. Tandilia and Ventania Mountains in the context of Pampa grassland ecoregion in Argentina. The red squares indicate the sampled area in Tandilia mountain range: **1.** *Reserva Natural Privada Paititi*; **2.** *Estancia El Bonete*; **3.** *Cerro Las Ánimas*; **4.** *Estancia Las Mercedes*; **5.** *Reserva Natural Sierra del Tigre*; **6.** *Los Teros*; **7.** *Cerro Boca del Diablo*; **8.** *Cerro Largo*; **9.** *Cerro Matilde-Catriel*. The green area indicates the Pampa ecoregion (Burkart et al. 1999).

values in the SNDB. Then, we assumed that something similar must be occurring with the specimens reported by the Museo Argentino de Ciencias Naturales (MACN) collection in the SNDB.

We also collected data on reptile presence through the citizen science project Reptiles de Tandilia. This project was specifically created to collect data about reptiles from the local people of the Tandilia mountain range. We talked with local people and explained to them how to collect data on reptiles through photographs and videos and which data are relevant to the research (i.e., date, hour, locality, and geographic coordinates). Then, they sent the records to our social networks and we revised each record. We helped people to identify reptile species and gate the records in a database. We collected and included in this study data from September 2019 to November 2020.

Since the habitats of Tandilia and Ventania highland grasslands are similar, we followed the categories proposed by Di Pietro et al. (2020b) for habitat description and classification. We used only the data from the fieldwork since almost all the other sources of records do not have habitat description. The main habitats' classes of the mountain range are grasslands, rocky outcrops, and water bodies. The native

Figure 2. Some lizards and amphisbaenians of Tandilia Mountains, in Argentina. **A.** *Amphisbaena kingii*. **B.** *Liolaemus absconditus*. **C.** *Liolaemus tandiliensis*. **D.** *Teius oculatus*.

grasslands present various microhabitats: a) dense grasslands, if they totally cover the area, b) open grassland, where the reptiles were found in a substrate of grassland and ground, c) shrubby grasslands, and d) under rocks immersed in grassland habitat. The rocky outcrops contain two types of microhabitat: a) loose rocks above rock substrate, and b) large blocks of rocks where the animals have been found basking or active. The water bodies include two microhabitats: a) stream edge and b) stream watercourse. The water bodies, in coarse-scale were mostly dry during the spring and summer.

Results

We obtained 551 records of reptiles in the Tandilia Mountains, from all sources of data (see Suppl. material 1). The composition of reptiles from the Tandilia mountain range includes 26 species (some of them illustrated in Figs 2, 3) distributed in the following 12 families: Amphisbaenidae, Liolaemidae, Tropiduridae, Phyllodactylidae, Gymnophthalmidae, Teiidae, Scincidae, Diploglossidae, Leptotyphlopidae, Dipsadidae, Viperidae and Chelidae (Table 1). The richest group was snakes, which represent 50% of the reptiles of the area, followed by lizards (38.5%), amphisbaenians (7.7%) and turtles (3.8%).

Figure 3. Some snakes in Tandilia Mountains, in Argentina. **A.** *Epictia munoai*. **B.** *Erythrolamprus poecilogyrus*. **C.** *Oxyrhopus rhombifer*. **D.** *Paraphimophis rusticus*. **E.** *Phalotris bilineatus*. **F.** *Pseudablabes agassizii*. **G.** *Xenodon dorbignyi*. **H.** *Bothrops alternatus*.

Table 1. Reptiles of the Tandilia Mountain System, Argentina. Global (IUCN) and national (Argentine National Red List) conservation status and previous references indicating their presence in the Tandilia Mountains (records from citizen science and online databases are available at Suppl. material 1). (v) indicates available voucher specimens from Tandilia Mountains at the Museo de La Plata collection (view Appendix 1).

Taxa	Conservation Status (IUCN/ Argentine)	References	Habitat
Amphisbaenia – Amphisbaenidae			
Amphisbaena darwinii	Least concern/Not threatened	Nágera 1915; Gallardo 1967, 1977; Vega and Bellagamba 1990; Williams 1991; Montero 1996. Citizen Science.	Grassland
Amphisbaena kingii (v)	Least concern/Not threatened	Holmberg 1884; Vega and Bellagamba 1990; Williams 1991; Montero 1996. Citizen Science.	Grassland
Iguania – Liolaemidae			
Liolaemus absconditus	Not evaluated/Not evaluated	Vega and Bellagamba 1990; Vega et al. 2018	Rocks
Liolaemus tandiliensis	Vulnerable/Endangered	Gallardo 1977; Vega and Bellagamba 1990; Vega et al. 2008	Rocks
Iguania – Tropiduridae			
Stenocercus pectinatus	Least concern/Not threatened	Holmberg 1884; Nágera 1915; Ringuelet and Aramburu 1957; Williams 1991	–
Gekkota – Phyllodactylidae			
Homonota williamsii (v)	Least concern/Not evaluated	Koslowsky 1896; Ringuelet and Aramburu 1957; Gallardo 1977; Vega and Bellagamba 1990; Williams 1991; Cei 1993; Cajade et al. 2013. Citizen Science.	–
Scincomorpha – Gymnophthalmidae			
Cercosaura schreibersii (v)	Least concern/Not threatened	Our study.	–
Scincomorpha – Teiidae			
Contomastix celata	Not evaluated/Not evaluated	Nágera 1915; Gallardo 1977; Williams 1991	–
Salvator merianae	Least concern/Not threatened	Holmberg 1884; Nágera 1915; Ringuelet and Aramburu 1957; Vega and Bellagamba 1990; Williams 1991. Citizen Science.	Rocks, grassland
Teius oculatus	Least concern/Not threatened	Gallardo 1977. Citizen Science.	Rocks, grassland
Scincomorpha – Scincidae			
Aspronema dorsivittatum (v)	Least concern/Not threatened	Williams and Kacoliris 2011	–
Anguimorpha – Diploglossidae			
Ophiodes vertebralis (v)	Not evaluated/Not threatened	Nágera 1915; Ringuelet and Aramburu 1957; Gallardo 1966, 1977; Williams 1991. Citizen Science.	Grassland
Serpentes – Leptotyphlopidae			
Epictia munoai (v)	Least concern/Not threatened	Vega and Bellagamba 1990; Williams 1991; Di Pietro et al. 2020a. Citizen Science.	Grassland
Serpentes – Dipsadidae			
Erythrolamprus poecilogyrus (v)	Least concern/Not threatened	Nágera 1915; Gallardo 1977; Miranda et al. 1982; Vega and Bellagamba 1990; Williams 1991; Di Pietro et al. 2020a. Citizen Science.	Grassland
Lygophis anomalus (v)	Least concern/Not threatened	Holmberg 1884; Nágera 1915; Miranda et al. 1982; Vega and Bellagamba 1990; Williams 1991; Di Pietro et al. 2020a. Citizen Science.	–
Oxyrhopus rhombifer (v)	Least concern/Not threatened	Holmberg 1884; Nágera 1915; Vega and Bellagamba 1990; Williams 1991; Di Pietro et al. 2020a. Citizen Science.	Grassland
Paraphimophis rusticus (v)	Least concern/Not threatened	Koslowsky 1896; Nágera 1915; Gallardo 1977; Miranda et al. 1982; Vega and Bellagamba 1990; Williams 1991; Scott et al. 2006; Di Pietro et al. 2020a. Citizen Science.	Grassland
Phalotris bilineatus	Least concern/Not threatened	Peters and Orejas–Miranda 1970; Gallardo 1977; Vega and Bellagamba 1990; Williams 1991; Di Pietro et al. 2020a.	Grassland
Pseudablabes agassizii	Not evaluated / Endangered	Vega and Bellagamba 1990; Williams 1991; Di Pietro et al. 2020a. Citizen Science.	Grassland

Taxa	Conservation Status (IUCN/ Argentine)	References	Habitat
Pseudablabes patagoniensis (v)	Least concern/Not threatened	Nágera 1915; Miranda et al. 1982; Vega and Bellagamba 1990; Williams 1991; Di Pietro et al. 2020a. Citizen Science.	Rocks, grassland
Psomophis obtusus (v)	Least concern/Not threatened	Di Pietro et al. 2010.	–
Tomodon ocellatus (v)	Least concern / Vulnerable	Citizen Science, Our study.	Grassland
Xenodon dorbignyi (v)	Least concern/Not threatened	Holmberg 1884; Nágera 1915; Gallardo 1977; Miranda et al. 1982; Vega and Bellagamba 1990; Williams 1991; Di Pietro et al. 2020a. Citizen Science.	Grassland
Serpentes – Viperidae			
Bothrops alternatus (v)	Not evaluated/Not threatened	Holmberg 1884; Nágera 1915; Gallardo 1977; Miranda et al. 1982; Vega and Bellagamba 1990; Williams 1991; Cei 1993; Di Pietro et al. 2020a. Citizen Science.	Grassland
Bothrops ammodytoides (v)	Least concern/Not threatened	Holmberg 1884; Miranda et al. 1982; Williams 1991; Di Pietro et al. 2020a. Citizen Science.	–
Testudines – Chelidae			
Phrynops hilarii	Not evaluated/Not threatened	Citizen Science, Our study	–

One species, *Liolaemus tandiliensis*, is globally threatened and listed as Vulnerable in IUCN and as Endangered in the Argentine Red List. At the national level, two snake species are threatened: *Pseudablabes agassizii* (Jan, 1863) as Endangered and *Tomodon ocellatus* Duméril, Bibron & Duméril, 1854 as Vulnerable. An Argentine Red List assessment is necessary for three non-categorized lizard species recently described, *Contomastix celata* Cabrera, Carreira, Di Pietro & Rivera, 2019, *Liolaemus absconditus* and *Homonota williamsii* Ávila, Perez, Minoli & Morando, 2012.

The habitat type where each species of reptile was found is indicated in Table 1. The habitat with the highest richness is grassland, containing the 88.2% of the species of Tandilia. The rocky outcrops contain 29.4% of the species. Also, 17.6% of the species are present in both grassland and rocky outcrops.

Discussion

We conducted an extensive review of museum collections, databases, and literature, and we included our fieldwork observations, to compile the most complete list to date of the reptile species inhabiting the Tandilia Mountains. This region sustains more than half (53%) of the species reported for the Pampa ecoregion (e.g, Koslowsky 1896; Ringuelet and Aramburu 1957; Gallardo 1966, 1967, 1977; Tiranti and Ávila 1997; Arzamendia and Giraudo 2002; Giraudo and Scrocchi 2002). In Tandilia Mountains would be surviving the 50% of amphisbaenians, 72% of lizards, 54% of snakes, and 33% of turtles of the Pampa Ecoregion in Argentina. Moreover, the Tandilia reptile richness represents the 44% of the reptiles mentioned in Buenos Aires province, including the 43% of snakes, 68% of lizards, 66% of amphisbaenians, and 14% of turtles (Abdala et al. 2012; Giraudo et al. 2012; Prado et al. 2012).

Nágera (1915) and Gallardo (1977) cited *Cnemidophorus lacertoides* (Duméril & Bibron, 1839) for Sierras Bayas and Sierra de la China respectively. However, these citations do not mention reference material. Based on molecular and morphological analyses Cabrera et al. (2019) reviewed their taxonomic status and described the species as *Contomastix celata*. This species is endemic to Argentina, occurring in the highlands of Córdoba and Ventania. Due to the lack of specimens in collections from Tandilia, we are not capable of review material and determine the taxonomic identity of the cited specimens by Nágera (1915) and Gallardo (1977). Therefore, we assume that the species cited would be *Contomastix celata*.

According to the Argentine Red List, the Tandilia Mountains are the refuge of 33% of threatened reptile species inhabiting the Pampa grassland. Habitat fragmentation and degradation of native grasslands are the main threats of the three threatened reptile species (*Liolaemus tandiliensis*, *Pseudablabes agassizii* and *Tomodon ocellatus*) of Tandilia Mountains (Etchepare et al. 2012a, b; Vega 2012; Kacoliris 2016). Even uncategorized, due to their restricted range, the recently described microendemic lizard (*Liolaemus absconditus*), would be a fourth threatened species of Tandilia highland grassland. Also, Cabrera et al (2019) indicated that due to the restrictive area, the status of *Contomastix celata* should be carefully analyzed in future evaluation.

We increased the known range of some species in the Tandilia Mountains. In the case of *Phalotris bilineatus* (Duméril, Bibron & Duméril, 1854), we found the first record in the northwest of the Tandilia system (i.e.; Cerro Largo, Sierras Bayas, Olavarría department); and for *Tomodon ocellatus*, we reported the southernmost record for the specie in Buenos Aires province. *Homonota williamsii* also extends their geographic distribution now present in Ventania and Tandilia Mountains. On the other hand, some reptile species seem to be rare or scarce in Tandilia. Four lizards (*Aspronema dorsivittatum* (Cope, 1862), *Cercosaura schreibersii* Wiegmann, 1834, *Contomastix celata*, and *Stenocercus pectinatus* (Duméril & Bibron, 1835)) and one snake (*Psomophis obtusus* (Cope, 1863)) species have few records, and we failed to find them during fieldwork. Although some authors have reported the presence of *Stenocercus pectinatus* in highland grasslands, the last known record in Tandilia Mountains is from 1915 (Holmberg 1884; Nágera 1915). Further surveys are needed to confirm the current presence of these species of reptiles in the region.

In the cases of turtles, they could be arriving from the stream Arroyo Tapalqué, where at least two specimens were collected (MACN-2239; MACN-785). We also consider the presence of these turtles could be associated with human translocation events, since they are out of the core distribution (Sánchez et al. 2019).

The Tandilia Mountains sustains a large number of Pampa reptile species, including threatened and endemic ones. The region urgently needs effective natural protected areas (Bilenca and Miñarro 2004; Brown and Pacheco 2006). Even when more studies are needed to understand the reptile distribution in the highland grassland, this work could be a useful tool to identify conservation priority areas for native reptiles of Tandilia Mountains.

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Appendix 1

Examined materials from the MLP

Family Amphisbaenidae
Amphisbaena kingii

Argentina • 1 specimen; Tandil, Cerro Independencia; 37°20.3883'S, 59°8.2033'W; Oct 1950; MLP-S.1474 • 3 specimens; Tandil, Calera Carba; 37°20.6133'S,

59°6.1417'W; 10 Oct. 1964; Comisión MLP expedition: MLP-S.1088, MLP-S.1089 and MLP-S.1090 • 1 specimen; Tandil, Estancia Las Mercedes; 37°22.63'S, 59°5.21'W, 250 m a.s.l.; 9 Nov. 2019; David Vera, Florcichu Dosil Hiriart, Germán Tettamanti leg.; MLP-R.6752.

Family Liolaemidae
Liolaemus tandiliensis

Argentina • 1 specimen; Tandil; 37°24.1'S, 59°5.7'W, 250 m a.s.l.; 18 Sep. 2019; David Vera, Germán Tettamanti, Habib Delfino Ahumada leg.; MLP-R.6759.

Family Phyllodactylidae
Homonota williamsii

Argentina • 1 specimen; Balcarce, Laguna La Brava; 37°51.93'S, 57°58.96'W, 88 m a.s.l.; 3 Feb. 2003; Diego Baldo, Daiana Ferraro leg.; MLP-S.2164.

Family Gymnophthalmidae
Cercosaura schreibersii

Argentina • 1 specimen; Azul, Estancia La Armonía; 37°1.7917'S, 59°51.82'W; 7 Oct. 1957; Becerra, Bonino leg.; MLP-S.1085.

Family Scincidae
Aspronema dorsivittatum

Argentina • 1 specimen; Azul, Libertad 226; 36°46.8333'S, 59°50.6183'W; Jan. 2010; Omar Conde leg.; MLP-R.5366 • 1 specimen; Azul; 36°46.6133'S, 59°52.2383'W; MLP-R.5860.

Family Diploglossidae
Ophiodes vertebralis

Argentina • 1 specimen; Olavarría, Arroyo Tapalqué; 36°52.715'S, 60°18.675'W; 15 Oct. 2011; Elián Guerrero leg.; MLP-R.5770. • 1 specimen; Tandil; 37°19.2483'S, 59°7.68'W; Jan. 2020; Judit Dopazo leg.; MLP-R.6776.

Family Leptotyphlopidae
Epictia munoai

Argentina • 1 specimen; Tandil; 37°19.3583'S, 59°7.9633'W; 11 Ago. 1982; José Speroni leg.; MLP-JW.0531 • 2 specimens; Azul, Pablo Acosta, Los Teros; 37°8.2217'S, 59°44.1883'W, 286 m a.s.l.; 14 Sep. 2019; David Vera, Habib Delfino Ahumada leg.; MLP-R.6753 and MLP-R.6754. • 1 specimen; Tandil; 37°23.2217'S,

59°4.29'W, 219 m a.s.l.; 18 Sep. 2019; David Vera, Germán Tettamanti, Habib Delfino Ahumada leg.; MLP-R.6755. • 2 specimens; Olavarría, Sierras Bayas, Cerro Largo; 36°54.9833'S, 60°10.06'W, 303 m a.s.l.; 16 Feb. 2020; David Vera leg.; MLP-R.6756 and MLP-R.6757 • 1 specimen; Olavarría, Sierras Bayas, Cerro Largo; 36°54.9817'S, 60°10.06'W, 299 m a.s.l.; 16 Feb. 2020; David Vera leg.; MLP-R.6758 •.

Family Dipsadidae
Erythrolamprus poecilogyrus

Argentina • 1 specimen; Azul, Ruta Provincial 266; 37°6.0747'S, 59°32.8132'W, 207 m a.s.l.; 14 Nov. 2019; Igor Berkunsky leg.; MLP-R.6767 • 2 specimens; Olavarría; 36°53.785'S, 60°18.85'W; Lautaro Moreira leg.; MLP-R.5319 and MLP-R.5320.

Lygophis anomalus

Argentina • 1 specimen; Azul; 36°49.8317'S, 59°51.8667'W, 145 m a.s.l.; 26 Nov. 2019; Luciano Vacarezza leg.; MLP-R.6769 • 1 specimen; Balcarce; 37°51.165'S, 58°16.1'W; MLP-JW.1338 • 1 specimen; Azul; 36°46.9217'S, 59°51.6817'W; Meo L. Luis leg.; MLP-JW.0855 • 1 specimen; Balcarce; 37°51.165'S, 58°16.1'W; MLP-JW.1357.

Oxyrhopus rhombifer

Argentina • 1 specimen; Balcarce; 37°51.165'S, 58°16.1'W; 12 May. 1996; Bomberos exped.; MLP-JW.1626 • 1 specimen; Sierra de los Padres, General Pueyrredón; 37°56.4133'S, 57°47.7667'W; 3 Nov. 2014; CEPAVE exped.; MLP-R.6270.

Paraphimophis rusticus

Argentina • 1 juvenile specimen; Tandil; 37°19.3583'S, 59°7.9633'W; 1994: MLP-JW.1846.

Phalotris bilineatus

Argentina • 1 specimen; Tandil, Reserva Natural Sierra del Tigre; 37°22.7617'S, 59°8.025'W, 339 m a.s.l.; 16 Sep. 2019; David Vera, Germán Tettamanti, Habib Delfino Ahumada leg.; MLP-R.6760.

Pseudablabes agassizii

Argentina • 1 juvenile specimen; Tandil, Estancia Las Mercedes; 37°22.645'S, 59°5.355'W, 252 m a.s.l.; 9 Nov. 2019; David Vera, Florenchita Dosil Hiriart, Germán Tettamanti leg.; MLP-R.6761 • 1 adult female; Lobería, Estancia El Bonete; 37°52.2633'S, 58°38.8017'W, 218 m a.s.l.; 21 Dec. 2019; David Vera, Manuel Eirin, Scarlett Méndez Herrera leg.; MLP-R.6762.

Pseudablabes patagoniensis

Argentina • 3 specimens; Tandil; 37°19.3583'S, 59°7.9633'W; 11 Oct. 1961; Comisión MLP exped.; MLP-JW.091, MLP-JW.092, and MLP-JW.093 • 1 specimen; Tandil; 37°19.3583'S, 59°7.9633'W; MLP-JW.0753 • 1 specimen; Tandil; 37°20.315'S, 59°5.61'W; MLP-R.5632 • 1 specimen; Tandil; 37°21.3883'S, 59°8.05'W; MLP-R.5633 • 1 juvenile specimen; Tandil, Estancia Las Mercedes; 37°22.32'S, 59°7.62'W, 225 m a.s.l.; 19 Nov. 2019; David Vera, Manuel Eirin leg.; MLP-R.6763 • 1 specimen; Lobería, Estancia El Bonete; 37°52.1717'S, 58°38.8083'W, 215 m a.s.l.; 21 Dec. 2019; David Vera, Manuel Eirin, Scarlett Méndez Herrera leg.; MLP-R.6764.

Psomophis obtusus

Argentina • 1 specimen; Tandil, Villa del Lago; 37°20.9517'S, 59°7.57'W; 6 Nov. 2003; Victor Sansberro leg.; MLP-JW.1799.

Tomodon ocellatus

Argentina • 1 juvenile specimen; Tandil, Cerro Pelado; 37°19.355'S, 59°7.9617'W, 192 m a.s.l.; 24 Mar. 1959; Bischoff de Alzuet, Vidal leg.; MLP-JW.1505 • 1 adult female; Tandil, Estancia Las Mercedes; 37°22.62'S, 59°5.4233'W, 258 m a.s.l.; 24 Jan. 2020; David Vera, Gonzalo Reuter, Pilar Plantamura leg.; MLP-R.6765.

Xenodon dorbignyi

Argentina • 1 specimen; Olavarría, Loma Negra, Villa Fortabat; 36°58.895'S, 60°16.6517'W; Sep. 1943; Novatti leg.; MLP-JW.0026 • 1 specimen; Balcarce, Laguna La Brava; 37°51.93'S, 57°58.96'W, 88 m a.s.l.; Diego Baldo, Mónica Barg, Daiana Ferraro leg.; MLP-JW.1680. • 1 specimen; Azul, Azul; 36°49.8317'S, 59°51.8667'W; Dec. 2019; Luciano Vacarezza leg.; MLP-R.6777.

Family Viperidae
Bothrops alternatus

Argentina • 1 specimen; Balcarce, Sierra del Volcán; 37°50.65'S, 58°5.0783'W; 18 Oct. 1885; MLP-JW.1506. • 1 specimen; General Pueyrredón, Ruta Provincial 226, Km 17; 37°54.8983'S, 57°44.6117'W; 28 Mar. 1968; Chiodi leg.; MLP-JW.0869 • 1 specimen; Tandil; 37°19.3583'S, 59°7.9633'W; 6 Dec. 1997; Igor Berkunsky leg.; MLP-JW.1925.

Bothrops ammodytoides

Argentina • 1 specimen; Necochea, San Manuel; 38°33.2033'S, 58°44.99'W; 11 Feb. 1978; Carlos Grisolía leg.; MLP-JW.0790 • 1 specimen; Balcarce; 37°51.165'S,

58°16.1'W; 6 Dec. 1997; Bomberos exped.; MLP-JW.1642 • 1 specimen; Balcarce; 37°51.165'S, 58°16.1'W; 18 Mar. 2002; Daniel De Fazy leg.; MLP-JW.1640 • 1 specimen; Olavarría; 36°53.785'S, 60°18.85'W; 24 Oct. 2002; Zoológico exped.; MLP-JW.1639 • 1 specimen; Azul, Pablo Acosta; 37°6.515'S, 59°51.37'W; 3 Nov. 2019; Clara Trofino Falasco, Gimena Pizzarello, Igor Berkunsky leg.; MLP-R.6766.

Supplementary material 1

Table S1

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Data type: Occurences

Explanation note: Contains reptile records obtained from online databases (Ecoregistros, iNaturalist, and Sistema Nacional de Datos Biológicas-SNDB-) and Citizen Science. The table contains the date, locality, latitude, and longitude. The empty fields correspond to data that were not available.

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